

CLAIMS

1. A method for locating a desired channel in a downstream signal comprising the steps of:
  - 5 scanning the downstream signal to generate a constructed channel response;
  - processing the constructed channel response to generate a prospective channel list; and
  - 10 checking the prospective channel list to find the desired channel.
- 10 2. The method of claim 1 comprising in addition the step of scanning the downstream signal with a coarse power spectrum scan to identify power containing regions of the downstream signal, wherein the step of scanning the downstream signal scans the power containing regions.
- 15 3. A method in accordance with Claim 1 wherein the coarse power spectrum scan has an increment that corresponds to a downstream physical layer bandwidth of about 6-8 MHz.
4. A method in accordance with Claim 1 wherein scanning the downstream signal comprises a relatively finer bandwidth power spectrum scan.
- 20 5. A method in accordance with Claim 1 wherein scanning the downstream signal comprises a relatively finer increment power spectrum scan.
6. A method in accordance with Claim 1 wherein scanning the downstream signal comprises performing at least one spectrum analysis operation.

7. A method in accordance with Claim 5, wherein the spectrum analysis operation comprises a fast Fourier transform.

8. A method in accordance with Claim 1, wherein the prospective channel list is checked with a QAM lock algorithm.

5 9. A method for locating a desired channel in a downstream signal comprising the steps of:

identifying power containing regions of the downstream signal with a relatively coarse power spectrum scan wherein each step of the scan covers about a 6-8 MHz portion of the downstream signal;

10 performing a relatively finer power spectrum scan on the power containing regions of the downstream signal to generate a constructed channel response of the power containing regions;

processing the constructed channel response of the power containing regions to generate a prospective channel list; and

15 checking the prospective channel list with a QAM lock algorithm until the desired channel is identified.

10. A method for locating a desired channel in a downstream signal comprising the steps of:

identifying power containing regions of the downstream signal with a 20 relatively coarse power spectrum scan wherein each step of the scan covers about a 6-8 MHz portion of the downstream signal;

performing a Fourier analysis on the power containing regions of the downstream signal to generate a constructed channel response of the power containing regions;

processing the constructed channel response of the power containing regions to generate a prospective channel list; and  
checking the prospective channel list with a QAM lock algorithm until the desired channel is identified.